

REMARKS

The Office Action dated May 10, 2007 has been fully considered by the Applicant. By way of amendment, new independent Claim 22 has been added.

I 35 U.S.C. § 103(a) Rejection of Claims 1-4, 10, 11 and 13

Applicant hereby responds to the Examiner's rejection of Claims 1-4, 10, 11 and 13 as unpatentable over Coates in view of the combination of Walles, Kotcharian and Henneck et al. (Henneck). Applicant respectfully disagrees with the Examiner's assessment that the present invention is obvious, based on the cited references being taken separately or in combination.

Regarding independent Claim 1, the Examiner contends that Coates discloses the present invention except for the upper bottom made of metal, except for the fiber insulation layer, and except for the lining layer. The Examiner cites Walles as teaching a flexible plastic layer of polyethylene, Kotcharian as teaching a fiber insulation layer of glass wool, and Henneck as teaching an upper bottom surface of metal located above a permeable layer. However, there is no suggestion in either Coates, Walles, Kotcharian, or Henneck to combine any or all of the teachings of those patents to form the present invention. It is improper to combine references to achieve the invention under consideration unless there is some incentive or suggestion in the references to do so.

The Court of Appeals for the Federal Circuit has repeatedly held that under Section 103, teachings from various references can be combined only if there is some suggestion or incentive to do so. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 221 USPQ 929 (CAFC 1984). Stated another way:

It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps...The references themselves must provide some teaching whereby the applicant's combination would have been obvious.

In re Gorman, 18 USPQ2d 1885 (CAFC 1991). The Examiner is required to follow the law as set forth by the Federal Circuit. However, the Examiner in the present matter has taken bits and pieces from four separate patents and has attempted to build the present invention from those pieces, despite the fact that none of the referenced patents contain any suggestion or incentive to combine with the others. Because of this lack of suggestion or incentive, it would not have been obvious to a person of ordinary skill in the art to have combined the teachings of these references to create the present invention.

Even if there were a suggestion to combine Coates, Walles, Kotcharian, and Henneck, the Examiner nonetheless errs in stating that the fiber insulation layer, as it is used in the present invention, is obvious because it would have been obvious in light of Kotcharian “to add insulation between the grid and the metal bottom of Coates to protect the bottom surface and the liquid contents from spikes in temperature and high temperature in general which could damage the contents or cause degradation of the contents due to high temperature exposure.” In Kotcharian, a heat insulating structure, such as stacked blocks of insulating material, is used in both the floor and walls of the tank to keep the contents of the tank cool so that heat-sensitive liquids, such as liquified natural gas, may be stored therein at a sufficiently low temperature. The present invention, on the other hand, utilizes the fiber insulation layer “not only as a spacer but an insulator to keep any heat generated from welding from damaging or melting the grid 36 or the lining layer 22,” p. 6 lines 19-20, p.11 lines 15-16. It is *not* used to keep the contents of the tank cool. There is nothing in Kotcharian to suggest to a person of ordinary skill to utilize the fiber insulation of Kotcharian to protect the grid or the lining layer of the present invention from melting when the upper metal bottom is welded to the tank. Thus, the use of at least one layer of fiber insulation on top of the grid

in the present invention to prevent the grid or the lining layer below it from melting during welding is non-obvious.

Moreover, even if there were a suggestion to combine Coates, Walles, Kotcharian, and Henneck and if using fiber insulation to protect the grid and lining layer were obvious in light of Kotcharian, the referenced patents still would not obviously combine to form the present invention because a person of ordinary skill would not have known to combine the teachings of those patents in the particular order set forth in Claim 1. Under Claim 1, the apparatus comprises four layers that are assembled in a particular order: the lining layer is placed first on top of the metal bottom, the plastic grid is placed second on top of the lining layer, the fiber insulation is placed third on top of the grid, and the upper metal bottom is placed last on top of the fiber insulation.

Coates teaches a grid between a lower bottom and an upper bottom, Walles teaches a plastic layer lining the interior surface of an outer wall, Kotcharian arguably teaches insulation between an outer wall and an inner wall, and Henneck teaches an upper bottom made of metal. However, nothing in any of the references describes the order in which their teachings are to be utilized. In particular, there is nothing to indicate the order in which the grid and the insulation should be placed. In the present invention, however, the order is vitally important because, as explained above, the insulation protects the grid from melting during welding. Therefore, in the present invention, the elements must be placed in exactly the order set forth in Claim 1. Nothing in any of the references makes this order obvious. A person of ordinary skill would not have known to combine the teachings of the referenced patents in the particular order set forth in Claim 1.

Claims 2-4, 10, 11, and 13 are dependent on Claim 1 and are believed allowable for the same reasons. Further regarding Claim 11, the Examiner states that “Walles teaches a fluid tight

containment space that is a vacuum and purged of oxygen” and that “it would have been obvious to modify the containment space to be purged of oxygen by reason of creating a vacuum to monitor leakage by monitoring the vacuum in the fluid tight space.” Walles does, indeed, teach a fluid tight containment space that is at least a partial vacuum and, although it does not specifically refer to being purged of oxygen, it can be assumed that there is no oxygen therein if it is, in fact, a vacuum. The purpose of creating this vacuum or partial vacuum in Walles is to monitor leakage. However, Claim 11 does not require the creation of a vacuum. Rather, Claim 11 requires the fluid tight containment space to be purged of oxygen only. It does not require the space to be purged of all other gases. In fact, the Detailed Description of the Preferred Embodiments states that the containment may be purged of oxygen by purging with nitrogen or other inert gas, p. 12 lines 12-14. Furthermore, the stated purpose of purging the containment of oxygen is to reduce oxidation or any effects of oxidation in the secondary containment space, p. 12 lines 14-15. To do so is not obvious in light of Walles, as Walles is not concerned with oxidation and speaks only of vacuums and partial vacuums, not of purging oxygen only.

II 35 U.S.C. § 103(a) Rejection of Claim 5

Claim 5 is dependent on Claim 4 and is believed allowable for the same reasons.

III 35 U.S.C. § 103(a) Rejection of Claims 6-9

Applicant hereby responds to the Examiner’s rejection of Claims 6-9 as unpatentable over Coates in view of Walles, Kotcharian and Henneck and further in view of Thomas. Applicant respectfully disagrees with the Examiner’s assessment that the present invention is obvious, based on the cited references being taken separately or in combination.

Regarding Claims 6 and 7, the Examiner notes that Thomas teaches an upper bottom extending through slots in the sidewalls, and that it would have been obvious to “extend the upper bottom plates through slots to provide better alignment and to provide stability to the plates before and during welding to fix the plates into position.” However, the Examiner ignores the innovation of Claim 6: the upper bottom is welded to the sidewalls by welding to a flat bar extending from the sidewalls. According to the Detailed Description of the Preferred Embodiments, the flat bar is welded to the outside of the sidewalls using a weld shown on Figures 3 and 4 as 20.¹ The inner edge of the flat bar has a chamfer so that the weld will not extend beyond the level of the flat bar or extend into the slot. The flat bar is so welded to the outside of the sidewalls after a slot or gap has been cut into the sidewalls but before any of the remaining elements are added, including the lining layer, sealant, leak detection ports, plastic grid, fiber insulation, and the metal plates constituting the upper bottom. When the upper bottom eventually is added, the flat bar is in place and the upper bottom may be welded to it instead of being welded on its underside to the sidewalls, as required in Thomas.

The key to this innovation is the fact that there is no necessity of welding underneath the upper bottom, and thus no need for overhead welding. This is a significant improvement over designs such as Thomas, which requires a continuous weld on the lower surface of the upper bottom, col. 4 lines 42-51. Not only is it an improvement, but it is a non-obvious solution to the existing problem of how to seal the connection between the upper bottom and the sidewalls without overhead welding. Nothing in Thomas suggests using a flat bar. Thus, while a portion of Claims 6 and 7 may

¹It appears from the Examiner’s comments that the Examiner believes weld 20 to be a weld between the upper bottom and the sidewalls. Please note that weld 20 is the weld that attaches the flat bar to the sidewalls long before the upper bottom is put in place, and that weld 20 has no connection to the upper bottom. Thus, weld 20 is made from above, as the upper bottom is not in place and thus in the way when weld 20 is made.

be obvious in light of Thomas, namely extending the upper bottom through slots in the sidewalls, the real innovation of those claims is not. Furthermore, it would not be possible to simply “remove welds below the upper bottom,” as suggested by the Examiner, because this would leave the underside of the upper bottom and sidewall unsealed. Clearly, the present invention does not merely remove welds, but rather adds the flat bar to allow all welds to be made from above while still maintaining a complete seal. This is the non-obvious innovation of Claims 6 and 7.

Claims 8 and 9 are dependent on Claims 1 and 7 and are believed allowable for the same reasons.

IV 35 U.S.C. § 103(a) Rejection of Claim 12

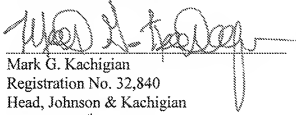
Applicant hereby responds to the Examiner’s rejection of Claim 12 as unpatentable over Coates in view of Walles, Kotcharian and Henneck and further in view of Dhellemmes et al. (Dhellemmes). Applicant respectfully disagrees with the Examiner’s assessment that the present invention is obvious, based on the cited references being taken separately or in combination.

The Examiner alleges that fastening the lining layer to the metal bottom is obvious in light of Dhellemmes because Dhellemmes teaches screws for fastening a lining and it would have been obvious to fasten the lining to prevent shifting and detachment and to better secure the lining. However, Dhellemmes teaches using screws to fasten watertight liner plates made of metal to the walls of a tank built into the hull and bulkheads of a ship. Nothing in Dhellemmes suggests securing a flexible plastic lining layer to the bottom of a tank as part of converting it to double bottom tank. Given the fundamental differences in procedure and utility of securing a metal plate versus a flexible plastic sheet, as well as the divergent purposes of so doing, it would not be obvious from Dhellemmes to fasten the lining layer to the metal bottom using a plurality of fasteners in the present invention.

CONCLUSION

It is believed that the foregoing is fully responsive to the outstanding Office Action and that the application is now in condition for allowance, which is respectfully requested. If any issues remain, a telephone conference with the Examiner is requested.

Respectfully submitted.

A handwritten signature in dark ink, appearing to read 'Mark G. Kachigian', is written over a horizontal line.

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